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GENERAL FLOW OF WATER CHARACTERISTICS TO COUNTY DRAINS/RIVERS/LAKES OR
ADJACENT WETLANDS. QUANTITIES MAY BE PLACED ON THIS SHEET.
- 11-2) WETLAND TYPICAL CROSS SECTIONS
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100' INTERVALS FOR GRADING STAKEOUT

MUSSON ROAD

MUSSON ROAD

QUANTITIES - THIS SHEET AND SHEETS 8,9,10 AND 13

181500	Syd	Topsoil Surface, Salv, 6 inch
130700	Syd	Topsoil Surface, Salv, 4 inch
52715	Cyd	Grading, Wetland
4	Ea	Stoplog Structure
6385	Cyd	Embankment, CIP, Wetland
1915	Ft	Ditch Cleanout, Mod
140	Ft	Culv, C1 A, 18 inch
118	Ft	Culv, C1 A, 12 inch
2	Ea	Sewer Bulkhead, 12 inch
7730	Ft	Erosion Control, Silt Fence (26)
373	Syd	Riprap, Plain (7)
10	Cyd	Erosion Control, Sediment Basin (21)
5	Ft	Erosion Control, Check Dam, Stone (97)
1	LS	Cofferdams

LEGEND

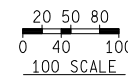
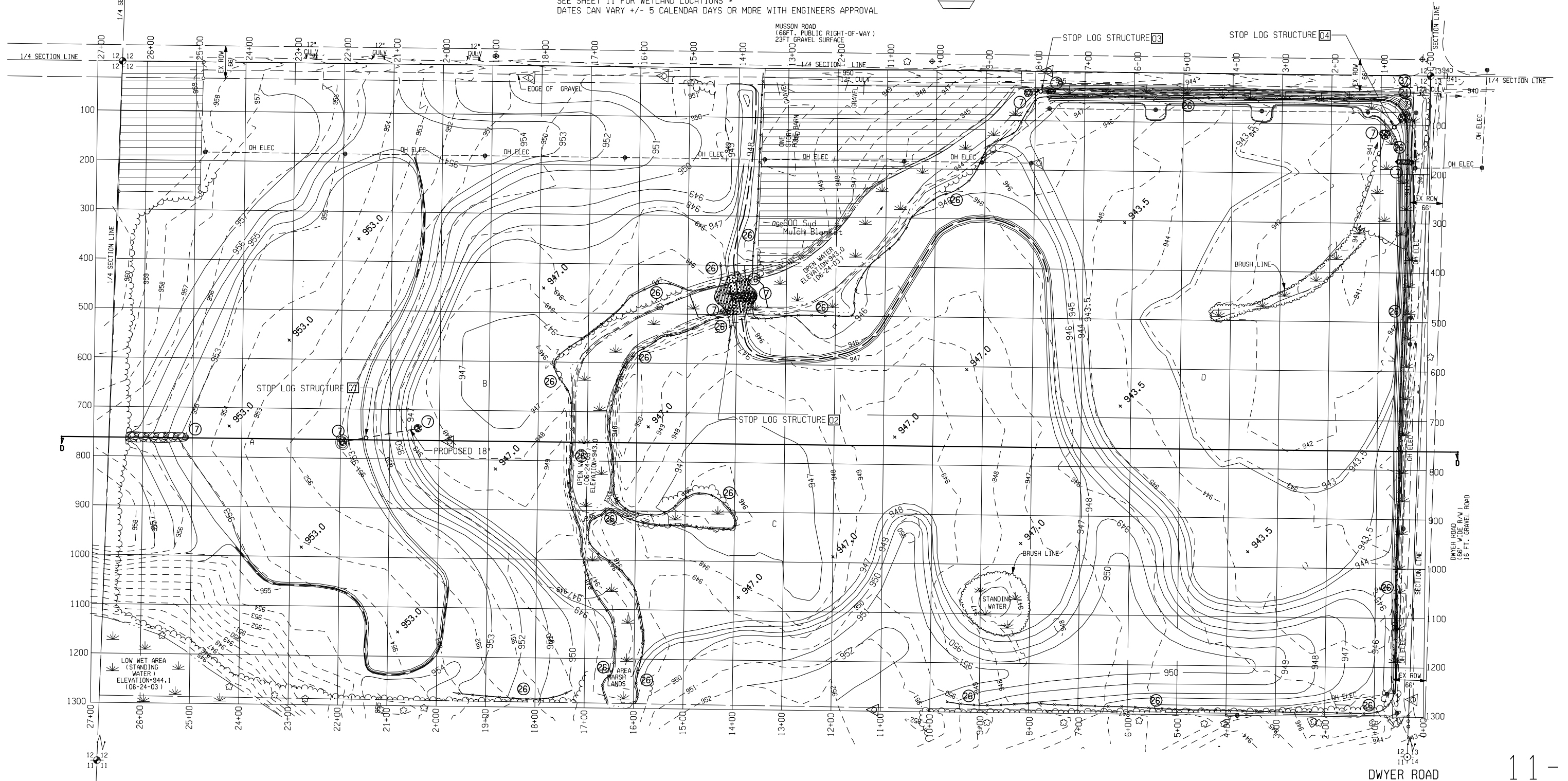
- EX CONTOUR
- 946 — PROP CONTOUR
- ⑦ SOIL EROSION MEASURE
- + 947.0 SPOT ELEVATION
- RIPRAP
- STOP LOG STRUCTURE
- SILT FENCE
- TEMP EARTH STOCKPILE AREA


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DWYER ROAD



SEE SHEET 11 FOR WETLAND LOCATIONS *
DATES CAN VARY +/- 5 CALENDAR DAYS OR MORE WITH ENGINEERS APPROVAL



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04/11/07					SHEET NO. R.O.W CONST.

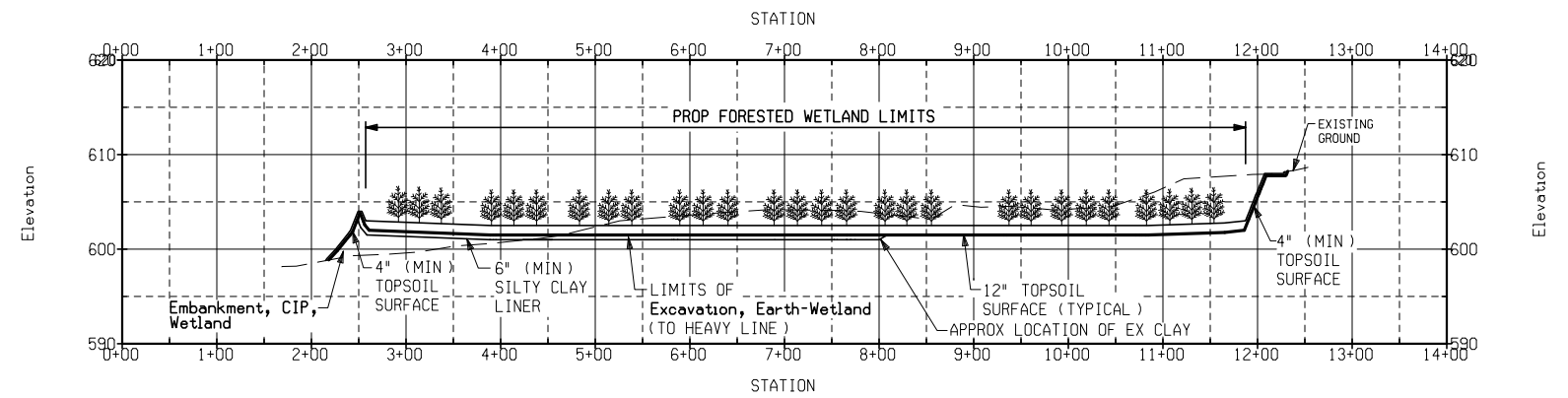
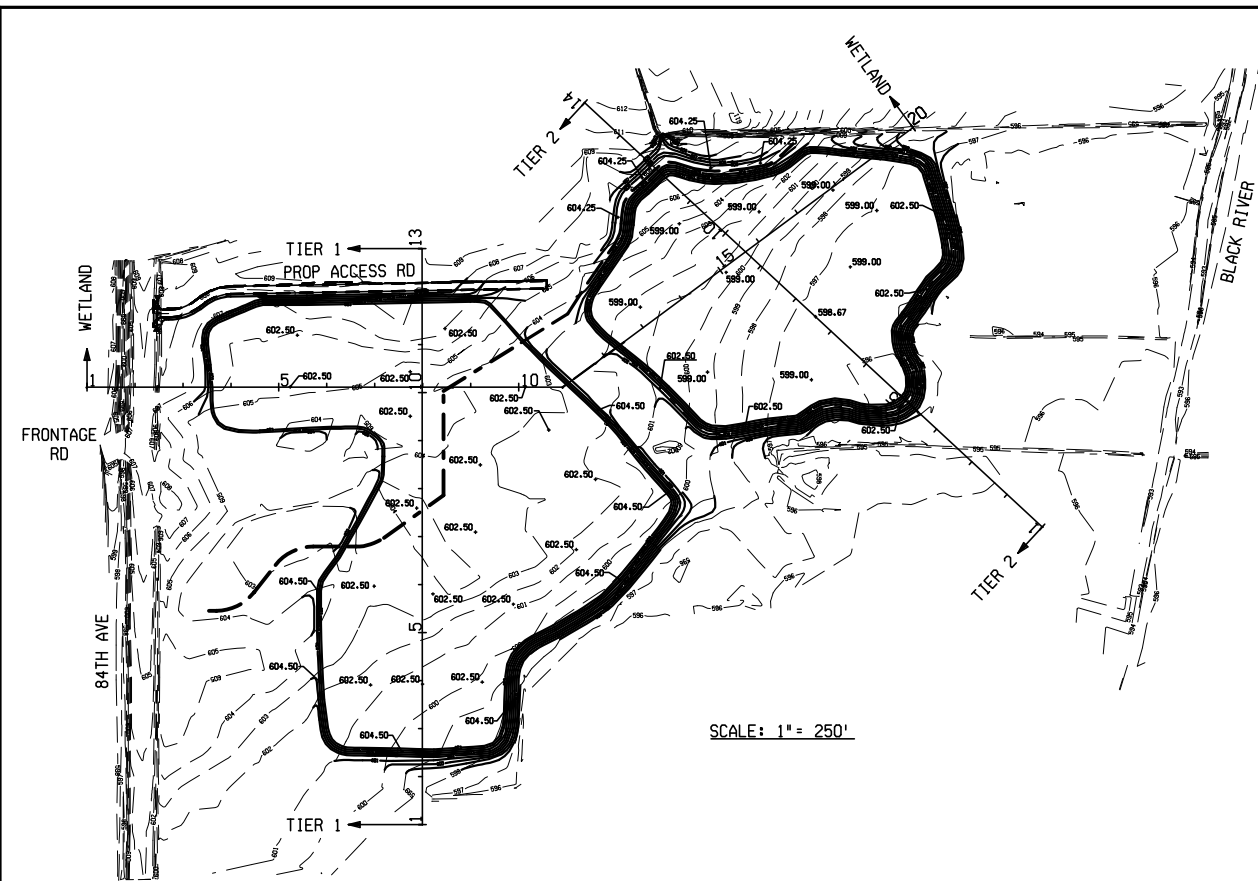
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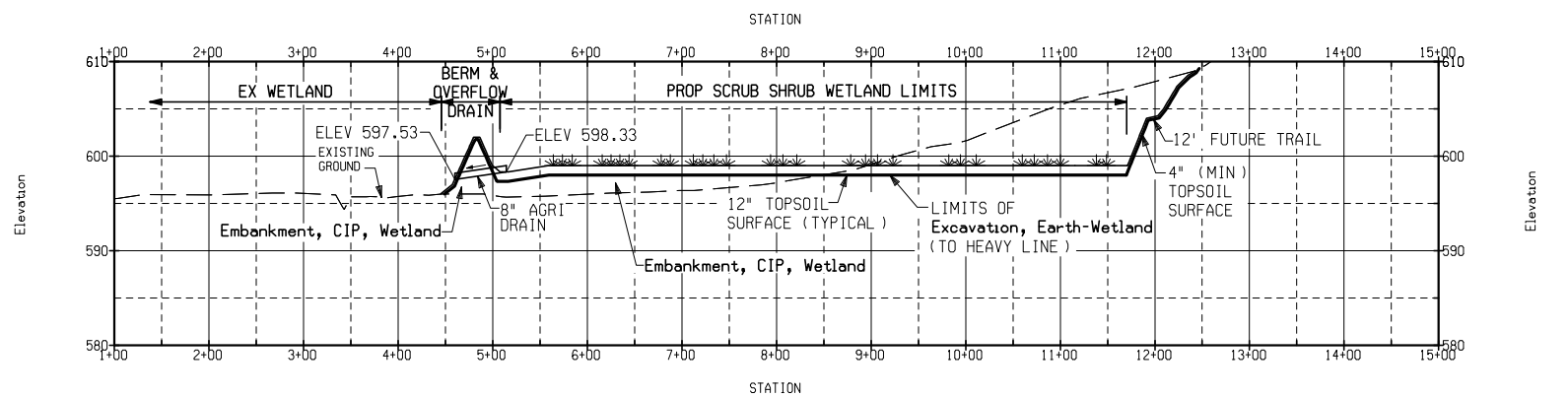
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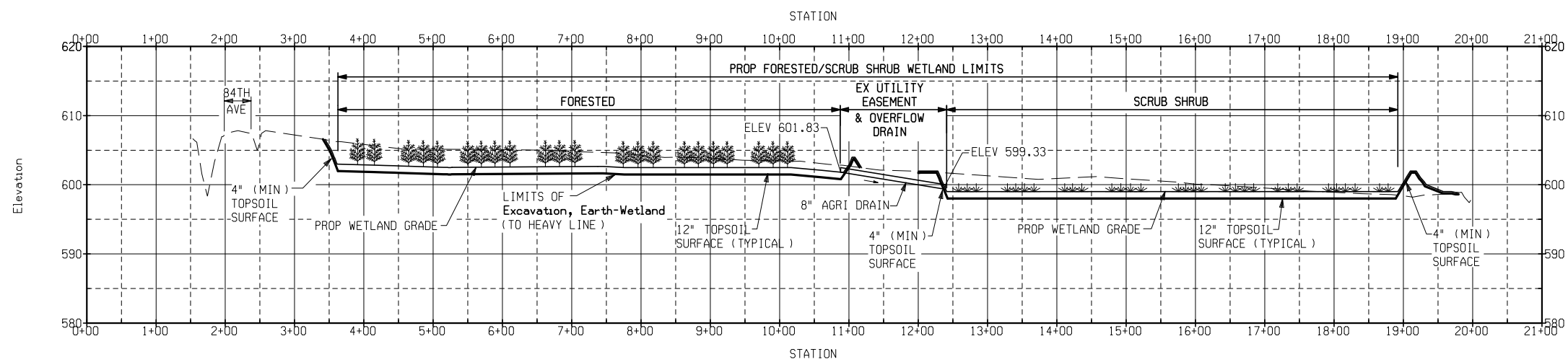
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TIER 1 SECTION



TIER 2 SECTION



WETLAND SECTION

- LEGEND
- FORESTED WETLAND
 - SCRUB SHRUB WETLAND
 - EX GROUND
 - PROP GRADE

20 50 80
0 40 100
100 SCALE

1"=10' VERT.
1"=100' HORIZ.



WETLAND TYPICAL CROSS SECTION

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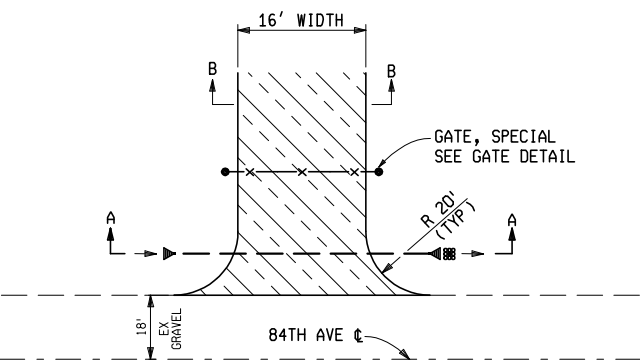
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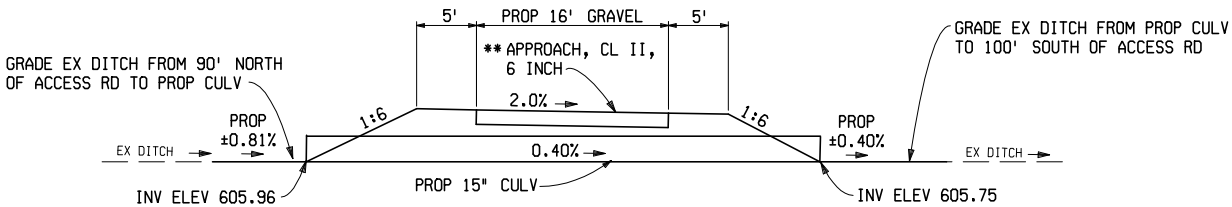
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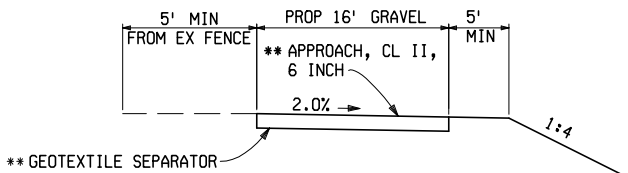
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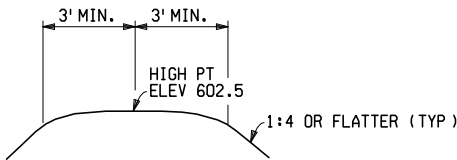
PROP ACCESS RD DETAIL



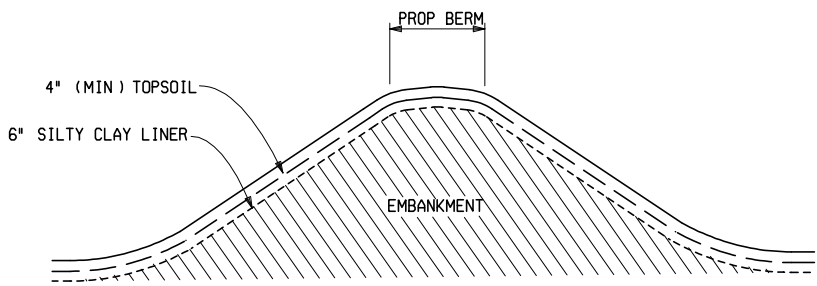
SECTION A-A



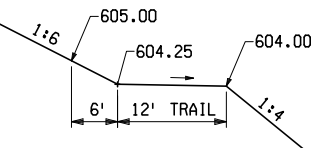
GRAVEL ACCESS ROAD
SECTION B-B
**INCLUDED IN PAY ITEM



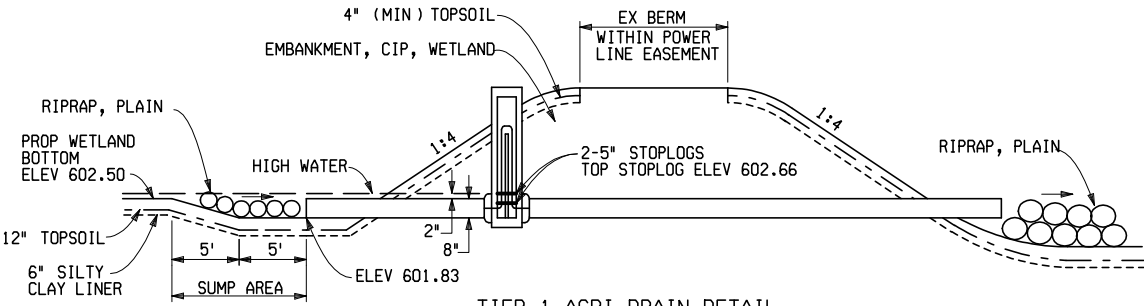
FUTURE NATURE TRAIL DETAIL
TO APPLY: SOUTH TIER 2 AS SHOWN ON PLANS



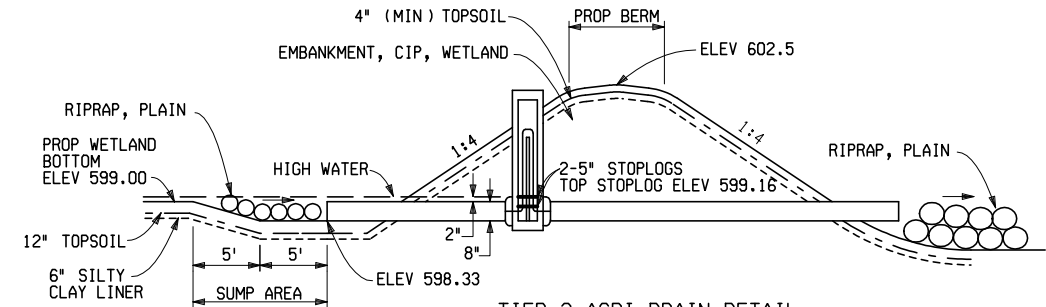
BERM DETAIL WITH SILTY CLAY LINER



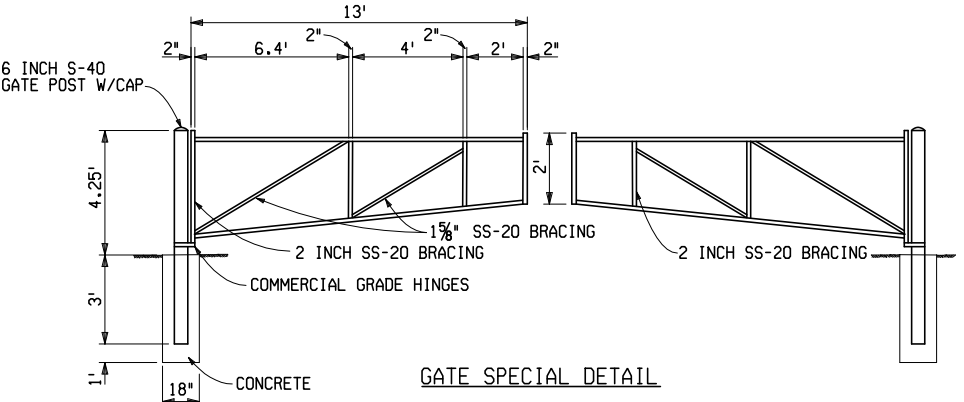
FUTURE HMA TRAIL DETAIL
TO APPLY: NORTH TIER 2 AS SHOWN ON PLANS



TIER 1 AGRI-DRAIN DETAIL



TIER 2 AGRI-DRAIN DETAIL

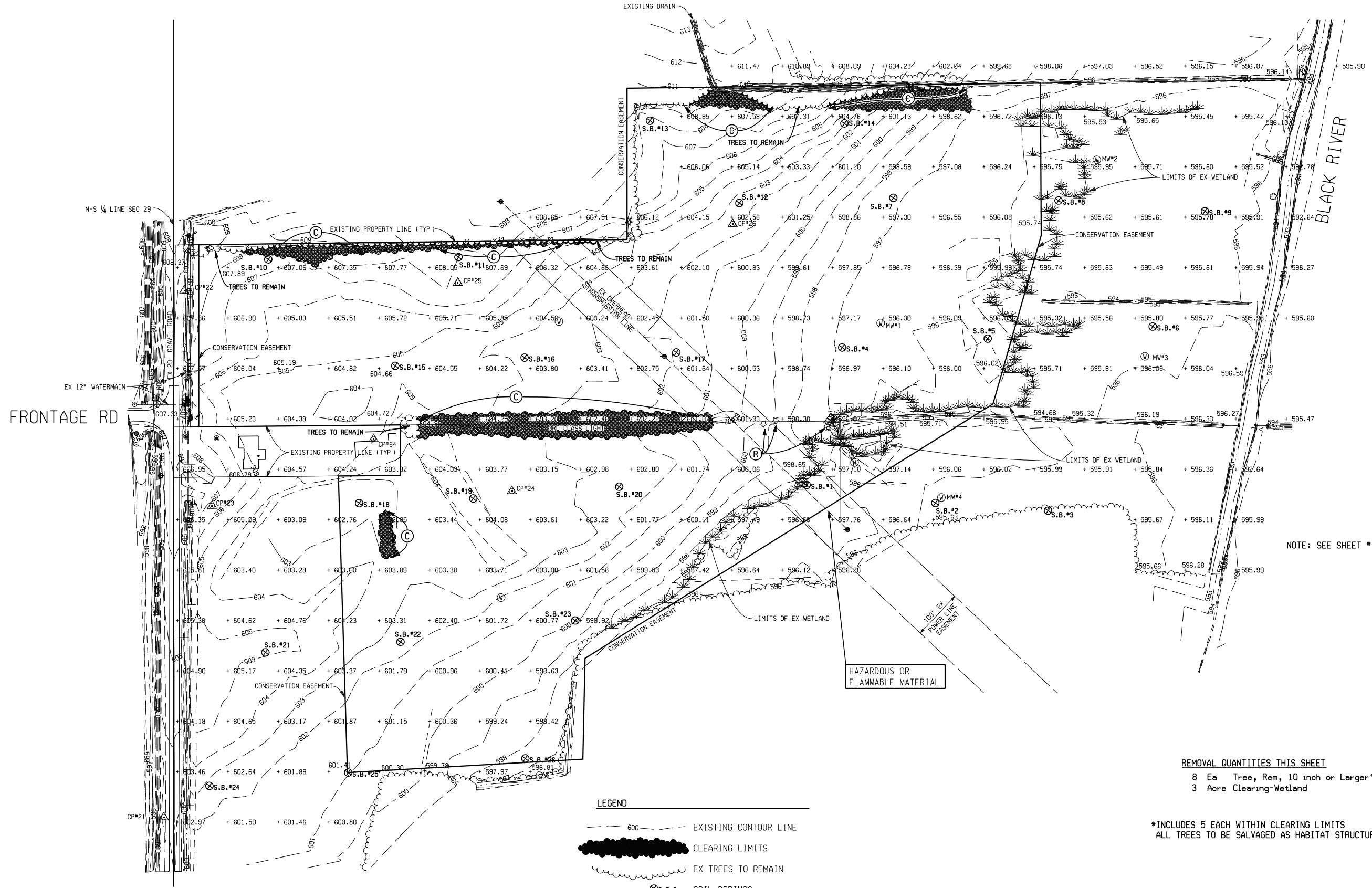


GATE SPECIAL DETAIL

84TH AVE

SECTION 29
T5N ,R14W
ZEELAND TWP

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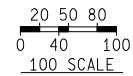



NOTE: SEE SHEET #12 FOR WELL LOGS FOR EX MONITORING WELLS #1-4

REMOVAL QUANTITIES THIS SHEET
8 Ea Tree, Rem, 10 inch or Larger*
3 Acre Clearing-Wetland

*INCLUDES 5 EACH WITHIN CLEARING LIMITS
ALL TREES TO BE SALVAGED AS HABITAT STRUCTURES

- LEGEND
- 600 --- EXISTING CONTOUR LINE
 - ██████████ CLEARING LIMITS
 - ~~~~~ EX TREES TO REMAIN
 - ⊗ S.B.*-- SOIL BORINGS
 - ⌵ LIMITS OF WETLAND
 - + 601.88 PROPOSED SPOT ELEVATIONS



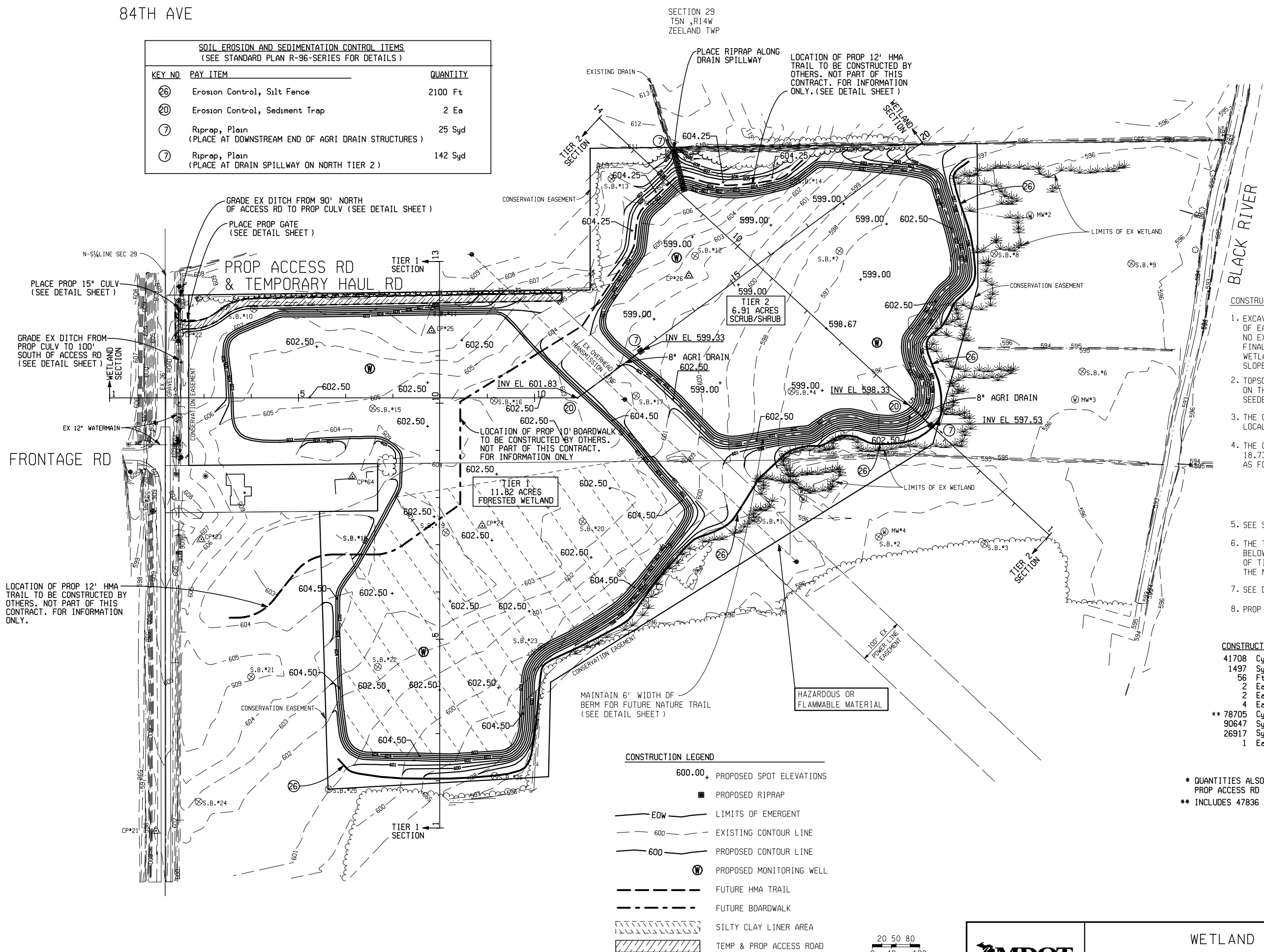
 Michigan Department of Transportation	WETLAND REMOVAL AND SOIL BORING SHEET				
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SOIL EROSION AND SEDIMENTATION CONTROL ITEMS (SEE STANDARD PLAN R-96-SERIES FOR DETAILS)		
KEY NO.	PAY ITEM	QUANTITY
②6	Erosion Control, Silt Fence	2100 Ft
②0	Erosion Control, Sediment Trap	2 Ea
⑦	Riprap, Plain (PLACE AT DOWNSTREAM END OF AGRI DRAIN STRUCTURES)	25 Syd
⑦	Riprap, Plain (PLACE AT DRAIN SPILLWAY ON NORTH TIER 2)	142 Syd



CONSTRUCTION NOTES

1. EXCAVATION OF EARTH MATERIALS SHALL BE TO THE LIMIT OF EARTH EXCAVATION SHOWN ON THE TYPICAL CROSS SECTIONS. NO EXCESS OF EARTH EXCAVATION WILL BE ALLOWED. FINAL GRADING ANY DISTURBED AREAS OF THE PROPOSED WETLAND SITE SHALL BE LEFT ROUGH GRADED. CLASS B SLOPES WILL NOT BE REQUIRED.
2. TOPSOIL SURFACE SHALL BE PLACED TO A DEPTH AS SHOWN ON THE PLANS. ALL AREAS COVERED WITH TOPSOIL SHALL BE SEEDED AND FERTILIZED PER THE 2003 STANDARD SPECIFICATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCAL PERMITS REQUIRED TO DO THIS WORK.
4. THE CONTRACTOR SHALL CONSTRUCT A TOTAL OF 18.73 ACRES OF WETLAND. THE WETLAND TYPES WILL BE AS FOLLOWS:

11.82	ACRES OF FORESTED
<u>6.91</u>	ACRES OF SCRUB SHRUB
<u>18.73</u>	TOTAL ACRES OF CREATED WETLANDS
5. SEE SHEET 9 FOR TIER 1, TIER 2 AND WETLAND CROSS SECTIONS.
6. THE TOP OF THE 6" SILTY CLAY LINER SHALL BE PLACED 12" BELOW THE PROPOSED WETLAND ELEVATION OF THE SOUTH PORTION OF TIER 1. SILTY CLAY MATERIAL SHALL BE EXCAVATED FROM THE NORTH PORTION OF TIER 1 AND TIER 2.
7. SEE DETAIL SHEET FOR BERM GRADING AND AGRI DRAIN DETAIL.
8. PROP ACCESS RD TO REMAIN AFTER CONSTRUCTION.

CONSTRUCTION QUANTITIES THIS SHEET

41708	Cyd	Embankment, CIP, Wetland *
1497	Syd	Gravel Access Road
56	Ft	Culv, Cl E, 15 inch
2	Ea	Culv End Sect, 15 inch
2	Ea	Stoplog Structure
4	Ea	Monitoring Well
** 78705	Cyd	Excavation, Earth-Wetland
90647	Syd	Topsoil Surface, Salv, 12 inch, Mod *
26917	Syd	Topsoil Surface, Salv, 4 inch, Mod *
1	Ea	Gate, Special

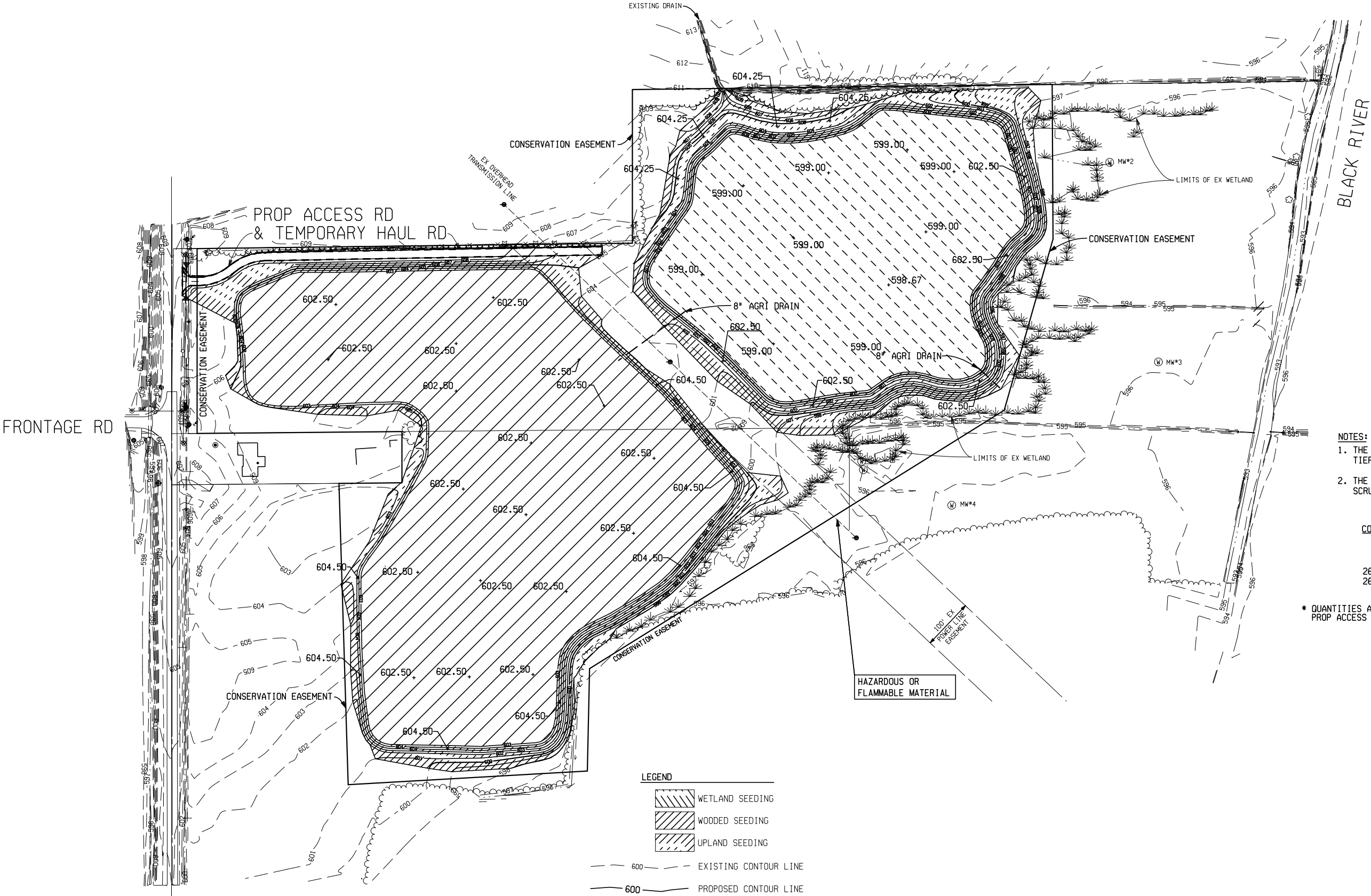
* QUANTITIES ALSO INCLUDE QUANTITIES FOR PROP 15" CULVERT,
PROP ACCESS RD AND EX DITCH REGRADING
** INCLUDES 47836 CYD OF TOPSOIL STRIPPING

11-6

84TH AVE

SECTION 29
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- NOTES:
1. THE WOODED WETLAND MIX SEEDING SHALL BE USED IN TIER 1.
 2. THE WETLAND SPECIAL MIX SEEDING SHALL BE USED IN THE SCRUB SHRUB AREAS OF TIER 2.

CONSTRUCTION QUANTITIES THIS SHEET			
221	Lb	Seeding, Wetland Special Mix	
567	Lb	Seeding, Wooded Wetland Mix	
206	Lb	Seeding, Upland Special Mix	
26917	Syd	Mulch *	
26917	Syd	Mulch Anchoring *	

* QUANTITIES ALSO INCLUDE QUANTITIES FOR PROP 15" CULVERT, PROP ACCESS RD AND EXISTING DITCH RE-GRADING

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WETLAND SEEDING SHEET				
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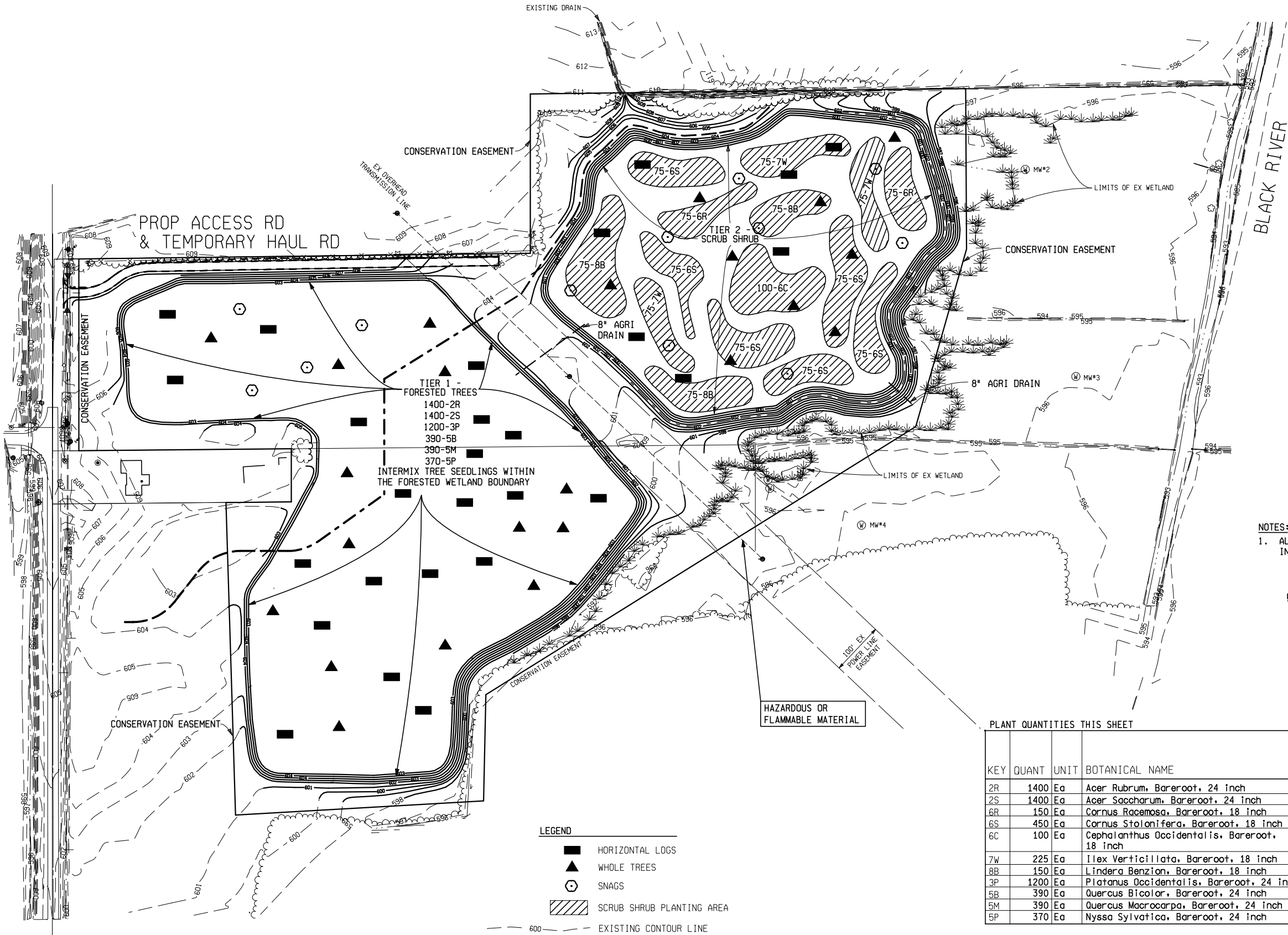
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ZEELAND TWP

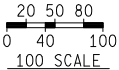
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FRONTAGE RD



LEGEND

- HORIZONTAL LOGS
- WHOLE TREES
- SNAGS
- SCRUB SHRUB PLANTING AREA
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- FUTURE HMA TRAIL
- FUTURE BOARDWALK



PLANT QUANTITIES THIS SHEET

KEY	QUANT	UNIT	BOTANICAL NAME	COMMON NAME
2R	1400	Ea	Acer Rubrum, Bareroot, 24 inch	Red Maple
2S	1400	Ea	Acer Saccharum, Bareroot, 24 inch	Silver Maple
6R	150	Ea	Cornus Racemosa, Bareroot, 18 inch	Gray Dogwood
6S	450	Ea	Cornus Stolonifera, Bareroot, 18 inch	Red-Osier Dogwood
6C	100	Ea	Cephalanthus Occidentalis, Bareroot, 18 inch	Buttonbush
7W	225	Ea	Ilex Verticillata, Bareroot, 18 inch	Winterberry
8B	150	Ea	Lindera Benzian, Bareroot, 18 inch	Spicebush
3P	1200	Ea	Platanus Occidentalis, Bareroot, 24 inch	Sycamore
5B	390	Ea	Quercus Bicolor, Bareroot, 24 inch	Swamp White Oak
5M	390	Ea	Quercus Macrocarpa, Bareroot, 24 inch	Bur Oak
5P	370	Ea	Nyssa Sylvatica, Bareroot, 24 inch	Black Gum

CONSTRUCTION QUANTITIES THIS SHEET

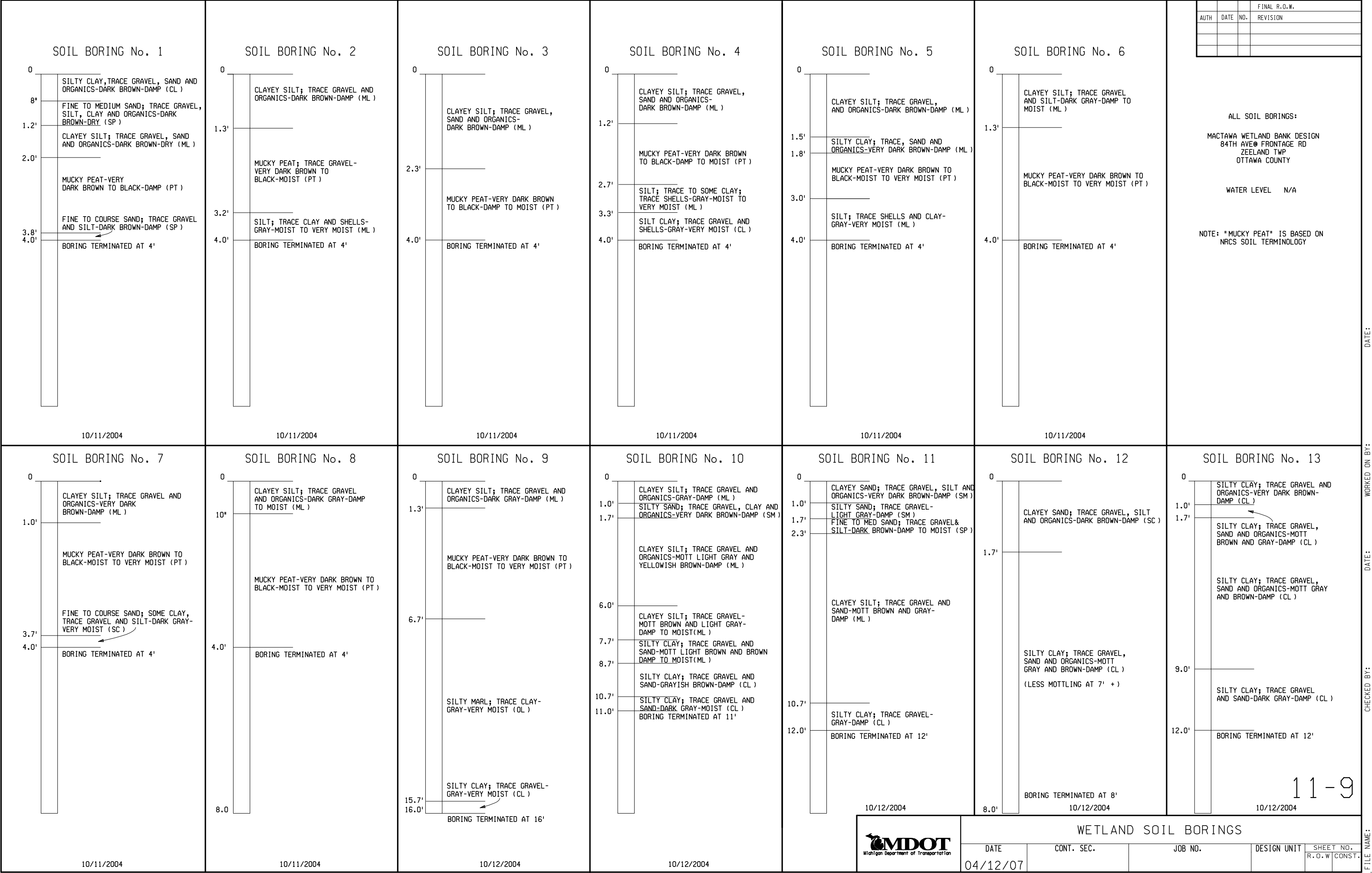
27	Ea	Habitat Structures, Log
23	Ea	Habitat Structures, Whole Tree
12	Ea	Habitat Structures, Snag

NOTES:

- ALL BAREROOT PLANT STOCK SHALL BE SPACED AT ±10' INTERVALS.

WETLAND PLANTING DETAIL SHEET				
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04/12/07				R.O.W CONST.

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DATE:

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